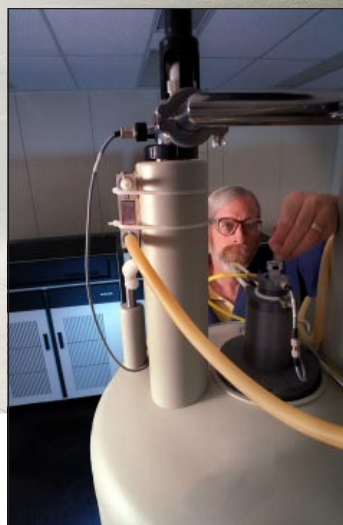
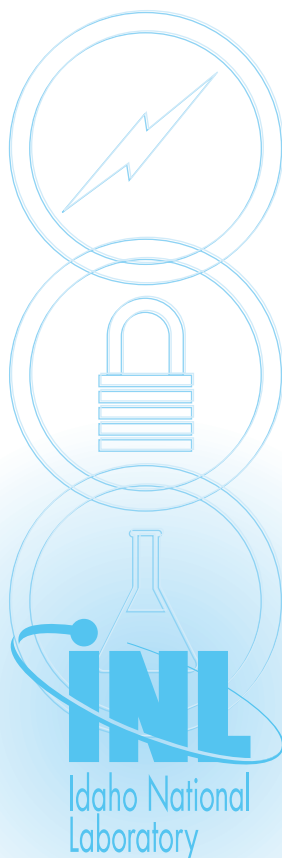


*National priority research is conducted at INL's three main campuses - the Reactor Technology Complex, Materials and Fuels Complex, and Science and Technology Campus.*



## INL Overview



**I**daho National Laboratory (INL) stands out as a unique national and international resource. Notably, the lab has been formally designated as the nation's command center for advanced civilian nuclear technology research and development, and is home to the unparalleled Critical Infrastructure Test Range, with assets as diverse as an isolable electric grid and wireless test bed. Leveraging these and numerous other distinguishing features, the lab and its more than 3,300 scientists, engineers and support personnel build on the potential and promise of the theoretical for the benefit of the real world.

### **One of the Few**

INL is one of only ten multi-program national laboratories owned by the U.S. Department of Energy. Geographically, INL is the largest lab – its nearly 570,000 acres also serving as a national environmental research park. As with its sister laboratories, INL performs work in support of each of the Department of Energy's four strategic goal areas – energy, defense, environment and science.

### **A Proud Past**

In the early days, INL was known as the National Reactor Testing Station. Since 1949, the Idaho site has been the location of many pioneering developments in the

area of nuclear energy. The world's first usable amount of electricity from nuclear energy was generated in Idaho in 1951. Over the years, 52 mostly first-of-their-kind reactors were designed and built at Idaho's national laboratory, creating the largest concentration of reactors in the world. After completing their work, most have since been decommissioned.

### **A High-performing Present**

Although INL today reports up through the DOE Headquarters Office of Nuclear Energy, Science and Technology and serves as the nation's lead laboratory for nuclear

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energy research and development, INL conducts a wide range of agency-supporting activities:

**Nuclear Science.** INL is the leading laboratory in basic nuclear and radiological science research and applications. Both DOE and non-DOE customers request the expertise and assistance of INL's leading nuclear scientists to address critical needs. For example, INL played a key role in the development of the recent Generation IV Reactor Technology Roadmap and is playing a key integration role in the Advanced Fuel Cycle Initiative.

**Nuclear Reactor Design, Development, Operations & Safety.** With over 55 years of experience in nuclear reactor and nuclear materials processing, plant design, operations and decommissioning, INL has internationally recognized expertise to conduct nuclear reactor R&D. INL is globally renowned for nuclear criticality safety leadership. INL nuclear operations, encompassing reactor operations and irradiation services, are based on a long tradition of safe and cost-effective operations for the DOE and its predecessors.

**National Security.** INL leverages its signature capabilities in wireless and communication systems, process control and cybersecurity, UAV platforms and sensors along with its complex, secure and remote facilities to provide comprehensive critical infrastructure testing and technology development to DOE, DHS, other government agencies and industrial partners. INL also plays a key role in nuclear materials nonproliferation for NNSA,

synergistic with the Laboratory's lead role in nuclear energy research and development.

INL is an innovator in science-based, integrated engineering systems for the Department of Defense, the Intelligence Community and others. Examples include armor solutions, munitions assessment systems and advanced detection technologies for nuclear materials, chemicals and explosives.

**Fossil Energy, Energy Efficiency, and Renewable Energy.** With its significant science and engineering capability in fundamental energy and materials science, transportation, industrial efficiency, energy efficiency, building technologies, and fossil energy, INL conducts targeted R&D for DOE's Fossil Energy, and Energy Efficiency and Renewable Energy programs.

INL is one of three lead laboratories for the DOE Geothermal Program and is responsible for the program's geoscience research component. INL is lead laboratory for engineering support to the DOE National Hydropower Program wherein it applies engineering expertise to issues such as fish mortality, impact on aquatic environments, water quality and

land use. Other active INL research programs in this area include those related to hydrogen production and use – including materials science, plasma technologies, biotechnology and alternate fuel transportation systems.

**Science.** The scientific reputation and credentials of INL researchers play a key role in accomplishing basic science activities. Broad research disciplines represented at INL include earth sciences and environmental engineering, biotechnology, physical systems modeling, systems engineering, intelligent automation and remote systems, applied engineering, materials processing, chemical separations and processing, and sensing and diagnostics. Primary SC assignments include research in neutron capture therapy, surface ionization mass spectrometry, and fusion safety.

### **A Plan for Tomorrow**

Moving forward, INL is planning to concentrate its considerable resources on six critical outcomes. These include:

**Nuclear science and technology programs** that target the greatest challenges to a technically, economically and environmentally compelling nuclear energy option for our nation and world.

**National/homeland security, energy and environmental programs** that leverage our nuclear capabilities, making substantial contributions to national missions.

A **robust science base** as the foundation for mission-enabling discoveries – a science base that attracts and holds pre-eminent scientists and engineers to INL. It will foster scientific inquiry while sustaining a passion for mission development.

A **central role in revitalizing nuclear science, technology and engineering education in the United States** – while helping the three Idaho research universities achieve world-class status in these areas.

**Extensive collaborations** with the premier academic, government and industrial nuclear science and technology organizations in the world – bringing their research and expertise to bear on INL's demanding missions.

The **forefront research facilities, support infrastructure and management systems** essential to delivering world-class research while operating to the highest standards of safety, environmental protection and efficiency – and helping restore public confidence in nuclear energy through operational excellence.

For INL, achieving these attributes will place it at the pinnacle of nuclear research, development, deployment and education — while broadening its multiprogram base and diversifying its science signatures, infrastructure, reputation and future mission capabilities.

### FOR MORE INFORMATION

866-495-7440 • [www.inl.gov](http://www.inl.gov)

INL is one of the U.S. Department of Energy's multiprogram national laboratories and is managed by Battelle Energy Alliance, LLC.

